

The gravity of the first-named class of injuries will be seen by a reference to the preceding table.

In addition to the suddenness and violence of the shock, and the apparent crushing and laceration of the parts, the injury to the soft tissues often far exceeds what is manifest to the eye, although the integument may to all appearance be sound and free from injury.

A recognition of these facts has led to the practice, in amputations, of giving the seat of injury "*a wide berth*," especially as relates to the lower extremity.

In those cases where the injury extends above the lower third of the leg, the rule is to amputate above the knee.

This may seem somewhat heretical, but the pulpification of the muscular tissue, the presence of coagula underlying the deep-seated muscles, and as I have frequently seen them extending from the seat of injury to the popliteal space, and the inevitable sequence of sloughing and extensive suppuration of the parts, too often followed in turn by septicæmia and pyæmia, are sufficient arguments, to my mind, to put a large joint between the point of operation and seat of injury.

The practice of the hospital has been eminently conservative, and amputation only resorted to when it became manifest that the limb was hopelessly injured.

In open stumps there sometimes exists, especially in muscular subjects, a strong tendency to retraction of the flaps. This is to be counteracted by the application of extension after Buck's method in cases of fracture of the thigh. The straps are to be applied on the anterior and posterior aspects of the limb, and are further utilized as granulation progresses, by pinning the two together, thereby approximating the flaps. By this method the dressing may be renewed, and the wound thoroughly cleansed without any inconvenience to the patient.

During the period embraced in this report, no accident has occurred from the use of anæsthetics: Ether, and Bader's formula, viz., alcohol 1 part, chloroform 2 parts, ether 3 parts, being the anæsthetics employed.

ARTICLE XIV.

INTESTINAL HEMORRHAGE AND ITS PROGNOSTIC SIGNIFICANCE IN TYPHOID FEVER. By M. B. HARTZELL, M.D., of Philadelphia.

AMONG the many accidents which may occur during the course of typhoid fever, intestinal hemorrhage is not very unusual. According to Bamberger, typhoid fever is, after dysentery, the most frequent cause of hemorrhage from the bowels.

Induced by the great diversity of opinion among authors concerning this complication, I have carefully analyzed a considerable number of cases with regard to the various circumstances under which it may occur; and more especially as to the influence which it exerts upon the prognosis, as this is the point upon which authorities differ most widely.

The hemorrhage may take place from the capillaries of the intestine without rupture of their walls, or it may proceed from an eroded vessel traversing the ulcers which constitute one of the pathologico-anatomical features of typhoid. It most likely happens in the first-mentioned way when it occurs at an early period in the disease, as the ulcerations have not then advanced far enough to produce a solution of continuity in the arteries supplying the intestinal mucous membrane. That large hemorrhage may occur without a rupture of the vessels is strikingly illustrated by a case reported by Markwald, in which a profuse intestinal hemorrhage occurred during the course of an attack of typhoid fever; at the post-mortem examination ulcerations were found, but upon injecting the vessels of the intestine with coloured fluid not a drop escaped to indicate the presence of a rupture.

In 5164 cases of typhoid fever which I have collected from various sources, intestinal bleeding happened 331 times, or in 6.4 per cent.; this corresponds very nearly with the percentage given by late writers; Liebermeister¹ puts the frequency of its occurrence at 7.3 per cent.; Griesinger at 5.3 per cent.

As to the time of its appearance it is most apt to happen during the second and third weeks of the attack. Of 187 cases examined with regard to the time of the hemorrhage, it was found to occur—

11	times	in	the	first	week.
55	"	"	"	second	"
61	"	"	"	third	"
41	"	"	"	fourth	"
15	"	"	"	fifth	"

while 4 cases occurred at a still later period; 81.9 per cent. of the whole number occurring in the second and third weeks.

It is worthy of remark that constipation exists much more frequently in the cases complicated by hemorrhage than in those running their course unaccompanied by this complication. In 60 cases noted by Murchison,² constipation existed 8 times; while in 89 cases which I have collected, this symptom was present 15 times, or in 16.8 per cent. It is very probable that the masses of hardened feces, by the pressure which they must exert upon the bowel in their passage through it, irritate the ulcerated mucous membrane and thus favour the occurrence of bleeding; this would in part explain the connection which seems to exist between these two symptoms.

¹ Ziemssen's Cyclopædia, vol. i. p. 147.

² Continued Fevers.

Sex seems to have no effect upon the frequency of the occurrence of the hemorrhage; in 42 cases 23 were males, 19 females.

In children typhoid fever is accompanied very infrequently by this complication; in 264 cases, occurring in children, hemorrhage was present but 5 times, or in 1.9 per cent., which is very much below the average frequency in adults.

The fact that there has been one hemorrhage makes it very probable that it will be repeated. In 11 out of 18 cases, or in 61 per cent., hemorrhage occurred several times; it is this repetition of the bleeding which is to be feared rather than an immediately fatal effect from a single hemorrhage.

While most authors, among them Louis, Jenner, Murchison, and Niemeyer, agree in attributing a grave significance to the appearance of enterorrhagia, such trustworthy observers as Stokes, Graves, Trousseau, and Flint, do not consider that it is of very grave import; indeed, according to Stokes,¹ "it may sometimes be regarded as to some extent a critical phenomenon, and it often produces a beneficial and curative effect, lessening the local determination and irritation," while Trousseau declares, "that hemorrhages in typhoid fever, so far from possessing the character of danger imputed to them, are usually of favourable augury."²

A careful examination of statistics, however, must lead to the conclusion that the presence of this complication influences the prognosis unfavourably. Opinions founded upon a limited number of cases cannot be taken as conclusive; it is only by examining a large number that we are enabled to arrive at a trustworthy conclusion.

In 60 cases of typhoid fever accompanied by hemorrhage, Murchison had 32 deaths, or 53.3 per cent.; but this is by no means to be taken as representing the gravity of this symptom, for 11 of these 32 died of peritonitis. Ragaine in 115 cases did not have a single death. It is very evident that any conclusion as to the fatality of intestinal hemorrhage, drawn from either of these two series, would be utterly worthless. In 127 cases Liebermeister found the mortality to be 38.6 per cent. Of 333 cases which I have analyzed there were one hundred and thirty-four deaths, or 40.2 per cent., which may be taken as fairly representing the mortality of this complication.

That astonishingly large quantities of blood may be lost without unfavourably influencing the course of the disease is known to every observer, and was well shown in a case of my own which I will here briefly sketch.

C. M., a locomotive fireman, 34 years of age, of robust frame and temperate habits, was taken ill with typhoid fever which quickly assumed a very unfavourable aspect; the temperature was continuously high, varying from 104.6° to 105°, with no morning remissions; there was active

¹ Lectures on Fever.

² Clinical Medicine, vol. i.

delirium and subsultus; the bowels were obstinately constipated. On the evening of the ninth day there was a profuse hemorrhage, ascertained by subsequent measurement to amount to three pints; this was followed by all the symptoms of profound anæmia—almost complete extinction of the radial pulse, profuse perspiration, restlessness, nausea, etc.; the temperature rapidly declined, falling more than 4° in five hours; within the next forty-eight hours the temperature reached 105.6° , but, as was not the case before the hemorrhage, it was quickly reduced by the use of antipyretics—*sodii salicylat.* principally; indeed, the hemorrhage seemed to have favourably influenced the obstinate character of the fever, making it much more amenable to treatment. There was no repetition of the bleeding, and the case progressed toward recovery without any other noteworthy symptom except the obstinate constipation, which persisted throughout the attack.

Although a digression, I wish here, on account of its success, to call attention to the manner in which the sodium salicylate was administered in this case. Taking advantage of the fact that the normal tendency of fever is to decline during the night, the drug was given exclusively at this time. By adopting this method, giving from 120 to 160 grains between 6 P. M. and 6 A. M., a morning remission of three and a half to five degrees was always obtained, and the evening rise notably diminished. In order to test its effect more thoroughly, the salicylate was omitted at various times; upon these occasions there was either no morning remission at all, or but a slight one of one-half to one degree. I am well convinced that, unless there is some special contraindication, this is the proper method to be pursued when we wish to obtain as great a reduction of the fever as possible, for I have never been able to produce such great falls in temperature by giving the antipyretic continuously through the twenty-four hours.

A careful analysis of the cases examined leads to the conclusion that the hemorrhage, if not inordinately large nor repeated, does not materially affect the prognosis in robust subjects; but, as I have indicated above, the bleeding is repeated in the majority of cases; it is this tendency to recurrence that makes entorrhagia in typhoid fever a symptom of unfavourable omen.

Furthermore, from the large proportion of deaths from peritonitis in the sixty cases recorded by Murchison, it would appear that cases accompanied by hemorrhage are much more apt to suffer from perforation of the bowel, the chief cause of peritonitis in typhoid fever; not because of the bleeding, but because the ulcerative process is much more severe in such cases, especially in those suffering from the hemorrhage late in the disease when the bleeding proceeds from a ruptured vessel. However, the number of cases is too small to draw a positive conclusion from with regard to this point.

When the intestinal hemorrhage is accompanied by bleeding from the gums, genital organs, and into the subcutaneous tissue, it is a symptom of the most serious significance, indicating a speedily fatal termination; it is then due to a profound alteration of the walls of the capillaries and of the

blood itself; the hemorrhage from the bowels is then only one manifestation of a general hemorrhagic tendency, a complete disorganization of the blood.

To conclude, while in some instances a hemorrhage from the intestines may seem to ameliorate the condition of the patient, this is not the rule; but, on the contrary, this symptom is to be looked upon as decidedly unfavourable, for in typhoid fever the total mortality is about 18 per cent.; in cases complicated by hemorrhage it is over 40 per cent., thus proving conclusively the unfavourable character of the complication; and the contrary opinion held by the distinguished authors quoted is only to be explained upon the ground that it was based upon an insufficient number of cases.

ARTICLE XV.

AN UNDESCRIBED SOURCE OF DANGER IN OVARIOTOMY. By T. M. DRYSDALE, M.D., of Philadelphia.

N. A., an unmarried lady, thirty years of age, was sent to me by Dr. H. S. Lucas, of Chester, Mass., January 6, 1880. She was of medium size, rather emaciated and pale, but cheerful. She gave me the following history: Her general health had been uniformly good, but she had never been strong. Her father was living and in good health; her mother had recently died from cancer of the uterus.

She had first menstruated when twelve years old, with violent cramps and copious flow. She has suffered greatly at her periods ever since, the pain occurring after the commencement of the flow. She menstruates regularly, with a profuse discharge accompanied by clots. The flow lasts from four to nine days, and has not increased since she discovered the tumour.

Four years ago she first noticed a bloating of the whole abdomen. It seemed to protrude, from the first, at the centre, and did not start from either side. Two years since, while nursing a sick sister, she had been much on her feet, which had caused the swelling to increase rapidly and become very prominent. The abdomen has enlarged slowly ever since that time, projecting most in the centre near the umbilicus.

She had consulted many physicians who had agreed in considering her disease as ascites. Dr. Lucas, however, on examining her had pronounced it ovarian dropsy. She had taken great quantities of medicine, such as elaterium, etc., which had injured her general health.

I found the abdomen occupied by a soft, movable, elastic tumour with smooth walls, which reached as high as three inches above the umbilicus. It was dull on percussion and vibrated, but did not fluctuate distinctly. The abdomen above the tumour was resonant on percussion, and there was resonance along the right border of the mass, but along the left it was dull.

The upper part of the pelvis was occupied by the tumour, which pushed the uterus downwards and to the right. The uterine sound entered four inches, and when inserted was not much affected by motion given the